Space Weather Forecast

Issued on Tuesday, 01 November 2022 at 13:18 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Minor Geomagnetic Storm on 03 and 04 November.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity has been Low over the last 24 hours, with minor Common-class flares observed. There are three numbered regions on the visible disc, two mature and relatively stable regions in the northwest and northeast quadrants. A further increasingly complex region has also developed in the southeast. The remaining two regions are simple and unnumbered. No Earth-directed coronal mass ejections have been observed.

Solar Wind / Geomagnetic Activity: The solar wind is slightly elevated, with a slowly declining trend. This is indicative of the waning coronal hole fast wind. Total interplanetary magnetic field strength was weak, with the important north-south component varying weakly. Geomagnetic activity was mainly Quiet to Unsettled (Kp 2-3) with one Active interval late on 31 October.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is likely to be Low or Very Low, with a very slight, but increasing chance of an isolated Moderate activity.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. The Earth is currently under the influence of an easing fast solar wind, with a further coronal hole fast wind also due to connect on 01 November, giving elevated speeds. This fast wind is then forecast to wane later on 02 November, with a connection to the next fast wind due on 04 November, speeds likely to be in the range of 500-600km/s. Geomagnetic activity is forecast to be mainly Unsettled with a very slight chance of Active or G1/Minor Storm intervals. Mainly Quiet to Unsettled activity expected on 02 and much of 03 November. There is a chance of Active to G1/Minor Storms either late on 03 or during 04 November due to the connection with the latter fast wind.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	1	20	40
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	5	10	20	20
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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